

8 7 6 5 4 3 2 1

10 11 12

STRAIGHTNESS  
FLATNESS  
CIRCULARITY  
CYLINDRICITY  
LINE PROFILE  
SURFACE PROFILE  
PARALLELISM  
PERPENDICULARITY  
ANGULARITY  
POSITION  
CONCENTRICITY  
SYMMETRY  
CIRCULAR RUN OUT  
TOTAL RUN OUT  
LEAST MATERIAL CONDITION  
MAX MATERIAL CONDITION  
PROJECTED TOL. ZONE

PRINTED IN WHITE  
DIESEL  
EMBOSSSED  
PRINTED IN YELLOW  
PRINTED IN WHITE  
REMOVE SLOWLY  
FUEL SPRAY MAY CAUSE INJURY

DETAIL B  
SCALE 2:1

GENERAL VIEW

NOTES:  
1. CAP SHOULD PASS OVERTUING TEST AS PER AIS-095 (CL NO. 3.9) (MAX. 30 gm/MIN. FUEL SHOULD COME OUT IN 5 MIN. DURATION OF TEST) (TEST TO BE CONDUCTED AT CUSTOMER END)  
2. THIS FUEL CAP IS SUITABLE FOR DIESEL FUEL TANK ONLY.

TABLE 1  
SEPARATION TEST

| ITEM                               | TEST PROCEDURE                                                                                                                                                                                                                                                                                                                                                       | REQUIREMENT                                                                                  |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| A. INSTALLATION AND REMOVAL TORQUE | INSTALLATION TORQUE:<br>INSTALL THE CAP ON THE FILLER NECK AND RATCHET ONE COMPLETE TURN.<br>TORQUE READING IS THE HIGHEST OF 3 CONSECUTIVE READING USING 3 CLICKS. FOR INSTALLATION AT 23±2°C<br>REMOVAL TORQUE:<br>INSTALL THE CAP ON THE FILLER NECK UNTIL RATCHETING OCCURS. TURN THE CAP SLOWLY COUNTER-CLOCKWISE AND READ THE MAXIMUM REMOVAL TORQUE AT 23±2°C | INSTALLATION TORQUE:<br>11-25 Kg cm<br>REMOVAL TORQUE:<br>11-25 Kg cm                        |
| B. PRESSURE VALVE PERFORMANCE      | MEASURE EXHAUST FLOW RATE                                                                                                                                                                                                                                                                                                                                            | VALVE SHOULD OPEN AT 80kPa (150kPa) (90 mBar ~150 mBar) & FLOW 0.1 LPM MIN.                  |
| C. VACUUM VALVE PERFORMANCE        | MEASURE FLOW RATE (23±2°C)                                                                                                                                                                                                                                                                                                                                           | 0.1 LPM MIN. AT 2.4 mBar (0.24kPa) max.                                                      |
| 1. LOW TEMP. ATMOSPHERE TEST       | MEASURE INITIAL PERFORMANCE A TO C AT -30°C                                                                                                                                                                                                                                                                                                                          | INSTALLATION TORQUE:<br>18 ~ 31 Kg cm<br>REMOVAL TORQUE:<br>14 ~ 28 Kg cm<br>SATISFY B AND C |
| 3. HEAT RESISTANCE TEST            | INSTALL THE CAP ON THE FILLER NECK AND LEAVE IT FOR 24hrs AT 80°C<br>MEASURE INITIAL PERFORMANCE A TO C AT 23±2°C                                                                                                                                                                                                                                                    | INSTALLATION TORQUE:<br>7 ~ 20 Kg cm<br>REMOVAL TORQUE:<br>5.9 ~ 28 Kg cm<br>SATISFY B AND C |
| 4. - 1 VAPOR                       | FILL THE FILLER NECK WITH FUEL T60 TO A LEVEL SUCH THAT THE SEALING SURFACE OF THE FILLER NECK IS 100 mm ABOVE THE LIQUID LEVEL.<br>INSTALL THE CAP ON THE FILLER NECK AND LEAVE IT AN UPRIGHT POSITION FOR 72h AT 40°C. REMOVE FUEL T60 AND LEAVE IT FOR 24 Hrs. AT 23°C. MEASURE INITIAL PERFORMANCE A TO C AT 23±2°C                                              | ↑                                                                                            |
| 4. - 2 LIQUID                      | FILL THE FILLER NECK WITH FUEL T60 COMPLETELY AND INSTALL THE CAP ON THE FILLER NECK.<br>LEAVE IT UPSIDE DOWN FOR 48h AT 40°C. REMOVE THE CAP AND WASH IT WITH FUEL T60. INSTALL THE CAP ON THE FILLER NECK AND LEAVE IT FOR 24 Hrs. AT 80°C. MEASURE INITIAL PERFORMANCE A TO C AT 23±2°C                                                                           | ↑                                                                                            |
| 5. VALVE PERFORMANCE TEST          | 10000 CYCLES AT ROOM TEMP. WHERE ONE CYCLE IS : (5 sec. ~2.0 Mbar VACUUM & 5 sec. 150kPa PRESSURE)                                                                                                                                                                                                                                                                   | SATISFY B & C                                                                                |

TABLE 2  
SERIES TEST

| ITEM                         | TEST PROCEDURE                                                                                                                                                                                                 | REQUIREMENT                                                                                                                                                                                                                  |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| INITIAL PERFORMANCE          | THE SAME AS A TO C IN TABLE 1                                                                                                                                                                                  | THE SAME AS INITIAL PERFORMANCE A TO C IN TABLE 1                                                                                                                                                                            |
| a. OPERATING DURABILITY TEST | 1000 CYCLES FROM ZERO TO MAXIMUM INSTALLATION TORQUE                                                                                                                                                           | INSTALLATION AND REMOVAL TORQUE:<br>9.8 TO 28 Kg cm                                                                                                                                                                          |
| b. HIGH TEMP. TEST           | INSTALL THE CAP ON THE FILLER NECK AND LEAVE IT FOR 14h AT 80°C                                                                                                                                                | INSTALLATION AND REMOVAL TORQUE:<br>9.8 TO 28 Kg cm                                                                                                                                                                          |
| c. THERMAL CYCLE TEST        | INSTALL THE CAP ON THE FILLER NECK<br>CONDUCT 3 CYCLE OF THE FOLLOWING CONDITION<br>80°C<br>23°C<br>-30°C<br>4 1 4 1<br>1 CYCLE<br>(10 Hours)                                                                  | (1) SATISFY INITIAL PERFORMANCE AFTER TESTING A TO C.<br>(2) GASKET PERFORMANCE: CAP WITH VACUUM PRESSURE VALVE CLOSED MUST BE FREE FROM AIR LEAK AT 50kPa. (PRE-TEST AND POST-TEST) CONDUCT THE TEST IN THE WATER FOR 5days |
| DROP TEST                    | DROP THE CAP 10 CYCLES ON CONCRETE FLOOR FROM A HEIGHT OF 1.5m IN DIRECTION AS SHOWN BELOW AT 30°C. MEASURE A TO C AT 23±2°C                                                                                   | SATISFY INITIAL PERFORMANCE A TO C                                                                                                                                                                                           |
| VIBRATION DURABILITY TEST    | TEST WITH THE FOLLOWING CONDITION IN NORMAL OPERATING POSITION<br>TEMP: 23±2°C<br>ACCELERATION: 20G<br>FREQUENCY: 10-2000 Hz<br>DIRECTION TIME<br>UP AND DOWN: 12h<br>RIGHT AND LEFT: 6h<br>FRONT AND REAR: 6h | FRONT<br>LEFT<br>RIGHT<br>DOWN<br>UP<br>REAR<br>LEFT<br>RIGHT<br>DOWN<br>UP                                                                                                                                                  |

CUSTOMER PART No.:

INSPECTION 4  
SAFETY CRITICAL  
IMPORTANT CONTROL 3

MAHINDRA & MAHINDRA LTD  
P-1 DRAWING DATE: 22-06-18  
FOR PROTO TYPE QTY:  
CRE FQ PE COMPLEX  
PROJECT FEATURE ADDITION  
DSNR CKR APPR  
SRD PAG RAW

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LOCATION STATUS

MAHINDRA & MAHINDRA LIMITED  
TRACTOR DIVISION  
KANDIVLI (EAST), MUMBAI 400 101, INDIA.  
E.R. / PROC. REQ. NO.: PART NO.: 007515769C91  
PART NAME: CAP FUEL TANK (MSTAR)  
MATERIAL: NA HEAT TREATMENT: NA  
NAME: SIGN: DATE: FIRST USED TRCR. MODEL: M STAR  
CAD ENGS. SRD 26-03-18 SCALE: NA  
DESIGNER: SRD 26-03-18 SCALE: NA  
CHECKER: PAG 26-03-18 UNIT QTY: 1  
APPR. BY: RAW 26-03-18 WEIGHT: kg.  
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ALL DIMENSIONS ARE IN mm. CHECK Dwg WITH LATEST CHANGE No.

AE REVISE & REDRAWN SRD PAG RAW 22-06-18  
AD REVISE & REDRAWN SRD PAG RAW 04-04-18  
E.R. NO. LET LOC REVISIONS DSNR CKR APPR. DATE